In the Claims

Please cancel claims 20, 25, 59, 62, 77, 91, 94, and 108-111 without prejudice to applicants' right to pursue the subject matter of these claims in a future continuation or divisional application.

REMARKS

Claims 1, 4, 8, 20, 25, 37, 40, 55-59, 62, 77, 91, 94 and 108-111 are pending in this application. Claims 20, 25, 59, 62, 77, 91, 94, and 108-111 have been withdrawn from consideration by the Examiner. Applicants hereinabove have canceled claims 20, 25, 59, 62, 77, 91, 94, and 108-111 without prejudice. Applicants request the entry of this Response. Upon entry of this Response, claims 1, 4, 8, 37, 40 and 55-58 will be pending and under examination.

Applicants acknowledge the Examiner's withdrawal of the rejection of claims 1, 4, 8, 37, 40 and 55-58 under 35 U.S.C. 112, first paragraph; claims 4, 8, and 40 under 35 U.S.C. 112, second paragraph; and claims 1, 4, 8, 37, 40, and 56-58 under 35 U.S.C. 103(a), in view applicants' purported prior arguments and amendments.

Rejection Under 35 U.S.C. §112, Second Paragraph

The Examiner maintained the rejection of claims 1, 4, 8, 37, 40, and 55-58 under 35 U.S.C. 112, second paragraph.

The Examiner noted applicants' argument that at page 40, lines 13-19, the disclosure teaches viral drug susceptibility as "the concentration of the antiviral agent at which a given percentage of indicator gene expression is inhibited". However, the Examiner asserted that the description of inhibition of an

indicator gene does not in and of itself define what is being tested for susceptibility. The Examiner alleged that the preamble of each of claims 1 and 37 remains indefinite. The Examiner then stated that amendment of the claims to indicate "susceptibility of an HCV viral segment to an HCV antiviral drug" would overcome this rejection.

The Examiner noted that the applicants had argued that claims 1 and 37 recite measuring expression of the indicator gene in a target cell in the absence of an HCV drug. The Examiner agreed that claim 1 does recite "when steps (a)-(c) are carried out in the absence of the HCV anti-viral drug", but alleged that it remains unclear what this measurement is being compared to, as the limitation of testing in the presence of antiviral drug is not recited until a later part of the claim. The Examiner asserted that the syntax of the claim and the order in which the steps have been recited remains confusing.

The Examiner noted applicants' arguments regarding the teachings in the disclosure of the determination of inhibitory concentrations based on comparisons of expression intensities of the indicator gene. However, the Examiner asserted that these teachings do not satisfy the requirement for the presence of a correlation step in the claims. The Examiner asserted that although claims are interpreted in light of the specification, limitations from the disclosure are not read into the claims, and that teachings found in the disclosure cannot be relied upon to fill in missing steps in a claimed method.

In response, the applicants respectfully traverse this ground of the rejection. Applicants emphasize that the term viral drug "susceptibility" is clearly defined in the specification on page

16, lines 21-26, and that it is clear from this definition and the corresponding examples in the specification, that viral replication is being tested for susceptibility to an HCV anti-viral drug. This is what one skilled in the art would understand antiviral drug susceptibility to mean, and indeed is what applicants define the term to mean on page 16, lines 21-26 of the specification. Therefore, applicants submit that the phrase "determining susceptibility to an HCV antiviral drug" is clear from the definition of viral drug susceptibility recited in the specification and that this is the meaning one skilled in the art would attribute to it. Consequently, applicants submit that the preamble is not indefinite.

Applicants' invention is a method for determining susceptibility of viral replication to an HCV anti-viral drug. Therefore, it would not be correct and in accord with the generally known meaning of anti-viral drug susceptibility, and applicants' definition recited on page 16, lines 21-26, to require that applicants recite "susceptibility of an HCV viral segment" in the preamble of claims 1 and 37. Although applicants' method utilizes a patient-derived segment in the method steps for determining susceptibility as defined in the specification, it is not correct to say it is susceptibility of the viral segment to an HCV anti-viral drug which is being determined by the applicants' method. For clarification of this point, in Example 1, on page 54, lines 15-35, to page 55, lines 1-15, applicants explain how expression of the indicator gene (or indicator) is linked to viral replication. Also on page 40, lines 13-19, applicants note that viral drug susceptibility "is determined as the concentration of the antiviral agent at which a given percentage of indicator gene expression is inhibited."

Applicants also submit that a "correlation step" is recited in the claims. As noted above on page 16, lines 21-26, viral drug susceptibility is generally defined as:

> The concentration of the anti-viral agent at which a given percentage of viral replication is inhibited (e.g. the IC_{50} value for an antiviral agent is the concentration at which 50% of virus replication is inhibited).

Also as stated above, on page 40, lines 13-19, applicants note that viral drug susceptibility "is determined as the concentration of the anti-viral agent at which a given percentage of indicator gene expression is inhibited." Therefore in the context of the present invention, applicants have clearly defined what the meaning of anti-viral drug susceptibility is and how it can be determined, e.g., measuring the inhibition of indicator gene expression. Therefore, use of those terms in the claims, namely anti-viral drug "susceptibility" and "indicator gene expression" necessarily includes the meanings the applicants and one skilled in the art have attributed to these terms.

Moreover, step (d) in claim 1 recites the step which correlates measurement of expression of the indicator gene to determination of anti-viral drug susceptibility. It is clear from the definition of those terms, as explained above, that the comparison of the measurement of expression of the indicator gene in the resistance test vector when a test concentration of the HCV antiviral drug is present with the measurement of expression of the indicator gene when the antiviral drug is absent, as recited in claim 1, correlates with a determination of antiretroviral drug susceptibility as recited in the preamble. In fact, applicants' construction of the resistance test vector having the indicator gene, wherein expression of the indicator

gene is dependent upon a patient-derived segment, and where viral drug susceptibility "is determined as the concentration of the antiviral agent at which a given percentage of indicator gene expression is inhibited" allows for determination of antiviral drug susceptibility based upon the relative differences in expression of the indicator gene with and without the HCV anti-viral drug. Moreover, applicants submit that is clear from the language of the claims, where exactly the test concentration of the HCV antiviral drug is present. Claim 1 and 47 recite that it can be present at steps (a)-(c), or at steps (b)-(c) or at step (c).

As a result, applicants' claimed method which utilize the resistance test vector establishes a correlation between expression/change of the indicator gene or indicator to susceptibility of viral replication to an HCV anti-viral drug. Therefore, applicants submit that claims 1 and 37 particularly point out and define their invention in compliance with 35 U.S.C. 112, second paragraph, in view of the definitions for the claimed elements recited in the specification. Accordingly, the applicants respectfully request that this ground of the rejection be reconsidered and withdrawn.

Applicants note that claims 4, 8, 40, and 55-58 are dependent from either base claim 1 or claim 37. Consequently, applicants submit that insofar as this ground of the rejection is obviated by the above remarks in respect of claims 1 and 37, it is also obviated in respect of the other claims. Accordingly, applicants respectfully request that the Examiner withdraw this ground of rejection.

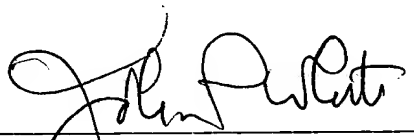
CONCLUSION

Applicants respectfully submit that the response places the claims now pending in condition for allowance and earnestly solicit an early notice to this effect.

If a telephone interview would be of assistance in advancing prosecution of the subject application, applicants' undersigned attorney invites the Examiner to telephone him at the number provided below.

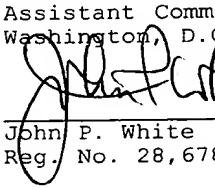
No fee, other than the enclosed $445.00 fee for a three month extension of time, is deemed necessary in connection with the filing of this Amendment. However, if any other fee is required, authorization is hereby given to charge the amount of any such fee to Deposit Account No. 03-3125.

Respectfully submitted,



John P. White
Registration No. 28,678
Attorney for Applicants
Cooper & Dunham LLP
1185 Avenue of the Americas
New York, New York 10036
(212) 278-0400

I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to:
Assistant Commissioner for Patents
Washington, D.C. 20231.



3/12/01

John P. White Date
Reg. No. 28,678